

ADB

# ERD Working Paper

ECONOMICS AND RESEARCH DEPARTMENT

## SERIES

### No. 66

Measuring Efficiency of Macro  
Systems: An Application  
to Millennium Development Goal  
Attainment

Ajay Tandon

March 2005

Asian Development Bank

Asian Development Bank  
6 ADB Avenue, Mandaluyong City  
1550 Metro Manila, Philippines  
[www.adb.org/economics](http://www.adb.org/economics)  
ISSN: 1655-5252  
Publication Stock No.:

Printed in the Philippines

ERD Working Paper No. 66

# Measuring Efficiency of Macro Systems: An Application to Millennium Development Goal Attainment

AJAY TANDON

March 2005

*Ajay Tandon is an Economist in the Development Indicators and Policy Research Division of the Economics and Research Department, Asian Development Bank. The author thanks Eric Suan for research assistance.*

Asian Development Bank  
P.O. Box 789  
0980 Manila  
Philippines

©2005 by Asian Development Bank  
March 2005  
ISSN 1655-5252

The views expressed in this paper  
are those of the author(s) and do not  
necessarily reflect the views or policies  
of the Asian Development Bank.

## FOREWORD

The ERD Working Paper Series is a forum for ongoing and recently completed research and policy studies undertaken in the Asian Development Bank or on its behalf. The Series is a quick-disseminating, informal publication meant to stimulate discussion and elicit feedback. Papers published under this Series could subsequently be revised for publication as articles in professional journals or chapters in books.

## CONTENTS

|   |     |
|---|-----|
| Abstract  | vii |
| I. Theoretical Background   | 2   |
| A. Outputs  | 2   |
| B. Inputs   | 3   |
| C. Exogenous Determinants   | 3   |
| II. Empirics of Efficiency Measurement  | 5   |
| A. Deterministic Frontiers  | 5   |
| B. Stochastic Frontiers   | 7   |
| C. Measuring Efficiency: A Simple Framework                                     | 8   |
| III. Efficiency of the Health System in Indonesia:<br>A Subnational Application | 10  |
| IV. Conclusions   | 13  |
| References  | 14  |

## ABSTRACT

At least part of the effort toward MDG attainment in the social sector could come from improvements in efficiency of delivery mechanisms. Hence, it is important to know which countries—or which regions within countries—are able to attain higher MDG outcomes even after controlling for resource inputs. This information can be useful for policymakers and enable a second-stage analysis of *why* is it that some are doing better than others. This paper reviews the methodology for measuring efficiency in macro systems using the health and education sectors as examples. A simpler characterization of efficiency that is less dependent on econometric specifications is introduced. As an example, this method of measuring efficiency is applied to assess health system outcomes at the district (*kabupatam*) level in Indonesia.

The UN Millennium Declaration, which was adopted by 189 countries in September 2000, has focused attention on the attainment of eight Millennium Development Goals (MDGs) by 2015. The goals, which are reflective of a fairly broad conceptualization of development, include targets for poverty reduction, gender equality, environment sustainability, educational attainment, as well as health improvements (UNDP 2003). This focus on MDGs has resulted in renewed attention toward measurement and monitoring issues, as well as on projections of indicators to 2015 to assess which countries are “on track.” In addition, there have been attempts to identify resource, institutional, and other constraints to MDG attainment (World Bank 2004).

There is a general consensus in the development community that at least part of the effort toward MDG attainment (and this is especially true for the social sector) could come from improved efficiency of existing delivery mechanisms (Jayasuria and Wodon 2003). Whereas it is true that macroeconomic growth would facilitate improvements in human development, the positive spillover effects from economic growth to the social sector are not as big as they might be for income poverty reduction (World Bank 2004). Furthermore, there is empirical evidence that suggests that high levels of economic development are not necessarily a prerequisite for high levels of human development. One reason is that, given the labor-intensive nature of service provision, the supply of health and education costs relatively less in poorer countries (Dreze and Sen 1989). Hence, the same levels of health and education outcomes can be achieved at far lower resource outlays in low-income countries. Two oft-cited examples are those of Sri Lanka and the state of Kerala in India. The implications are that resource constraints can, at least in part, be offset by good governance, effective institutions, political will, or other such factors.

In order to identify efficiencies, the first step is to identify which countries as well as which regions within countries have been relatively successful in MDG attainment *after* controlling for resource inputs. A second step would be to then examine *why* it is that some countries are doing better than others in their resource-level group in achieving MDG outcomes. If a given country is found to be relatively efficient but has yet to attain a given MDG then this would imply that additional resource outlays are most likely going to be required for achieving further progress. If, on the other hand, a country is relatively inefficient then this suggests that both increases in efficiency at current resource levels as well as increases in resource outlays are potential pathways to MDG outcome increases. In addition, identification of inefficiencies is a first step toward understanding factors that contribute to inefficiencies: some of these may be policy-related, but others may be factors that are beyond the immediate control of governments (e.g., external shocks, civil strife, etc.).

The problem of estimating MDG efficiency is similar to the classic problem of estimating technical efficiency in industrial and agricultural economics, whereby efficiency in converting inputs into outputs is inferred from how far the output of a given production unit is from the maximum output (the “frontier”). This paper summarizes the methodology as applied to MDG attainment for two macro systems, namely the health and education sectors. The paper is based in part on Tandon et al. (2003). The paper outlines a simpler way to characterize efficiency that is more transparent and

less dependent on specific econometric assumptions. The paper concludes with a discussion of this approach in helping identify policy-dependent factors that can have an effect on improving the efficiency of MDG outcomes. These issues are especially relevant for human development in Asian DMCs as most projections show that, even though progress on income-related MDGs has been encouraging, the prognosis for achieving social-sector and other nonincome MDGs by 2015 is not positive for the region as a whole (ADB 2004).

## I. THEORETICAL BACKGROUND

In the production function literature, technical efficiency is defined as output relative to the maximum output for given input levels (Kumbhakar and Lovell 2000). Usually, one way to assess efficiency is to estimate a frontier production function (the maximum observed output for all available input levels).<sup>1</sup> Once the frontier has been identified, then distance from the frontier is a measure of efficiency [ $b/(a+b)$  in Figure 1]. Figure 1 shows one example with two countries having the same output. However, because country A is able to achieve the output at a lower level of inputs than country B, it is deemed to be more efficient. The first step in applying this framework to MDG attainment is to conceptualize the pertinent sectors as production units. In this paper, we consider applying the efficiency framework to health and education-related MDG attainment and this implies conceptualizing—at least metaphorically—the health sector and education sector as production-oriented macro systems. The next steps are to specify inputs, outputs, and other factors that can have an influence on the production process.

### A. Outputs

As the concern is to assess the efficiency of MDG attainment, the relevant MDG indicators can be assumed to represent outputs of the respective sectors.<sup>2</sup> So, for instance, for the education sector we take net primary enrollment ratio as an indicator for the following MDG education target:

Ensuring that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling.

Similarly, we take under-five mortality rate as an indicator for the following MDG health target:

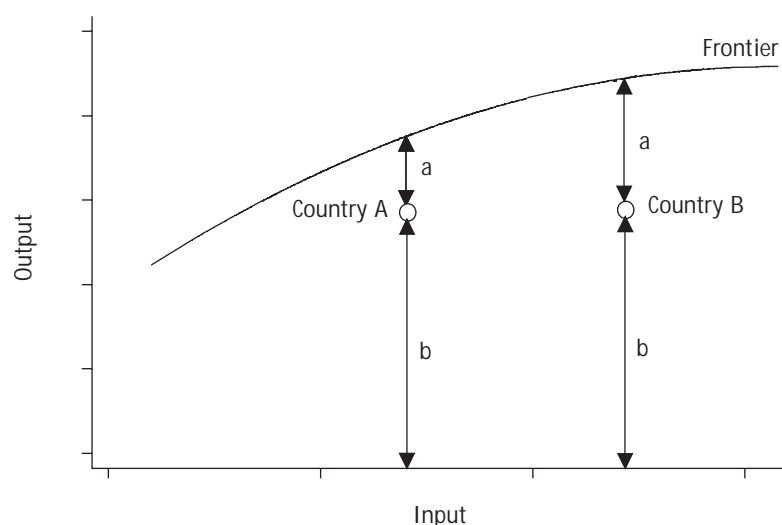
Reducing by two-thirds, between 1990 and 2015, the under-five mortality rate.

---

<sup>1</sup> This approach is the macro approach. A micro approach to measuring efficiency would identify the set of available interventions that yield the maximum possible outcomes.

<sup>2</sup> In several instances, there are multiple indicators of any given MDG target. This multiplicity can be taken into account by constructing an output index. For expository purposes, for now we focus only on one of the indicators each for the health and education MDG targets.

**FIGURE 1**  
**FRONTIER PRODUCTION FUNCTION AND TECHNICAL EFFICIENCY**



## B. Inputs

Inputs refer to (controllable) sectoral factors that contribute to attainment of the chosen MDG indicators. The idea here is to take into consideration resources at the disposal of the respective sectors.<sup>3</sup> For this purpose, inputs could be public expenditure allocations, existing capital, buildings, labor employed in the health and education sectors, etc.

## C. Exogenous Determinants

These are factors that are not directly related to resources in the sector in question, but may have an effect on the relationship between inputs and outputs. In other terms, this refers to factors that characterize the environment within which the production is taking place. So, for instance, educational attainment could be considered an exogenous determinant of health in that, for the same resource input, higher educated populations are likely to have systematically higher health outputs. Similarly, controlling for the level of sectoral expenditure, a higher *share* of that sector in total expenditure may serve as a proxy for political commitment to that sector and may have a positive influence on outcome attainment.

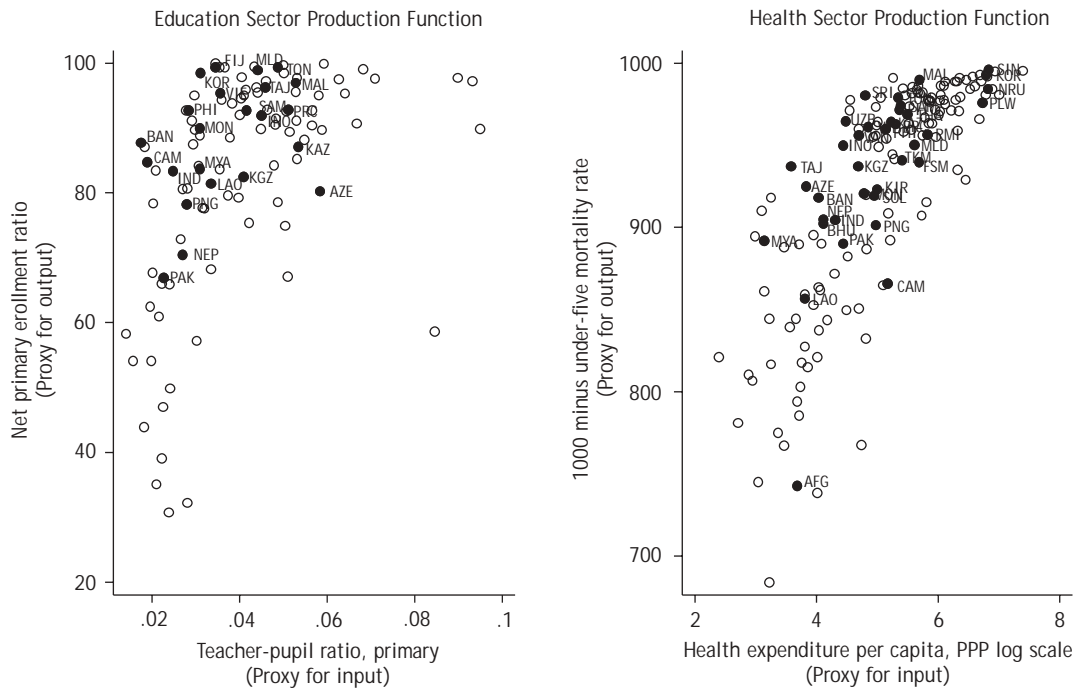
<sup>3</sup> It is important to note that we are not estimating a full production function, in that we are not taking into account all factors that contribute to the achievement of outcomes: we are only considering resources at the disposal of the respective sectors as inputs. Other factors influencing outcomes—which include socioeconomic, behavioral, institutional, and environmental factors—can be incorporated as exogenous determinants characterizing the environment within which conversion of input resources to outcomes occurs.

Table 1 summarizes the application of this theoretical framework to the measurement of MDG efficiency in the education and health sectors. Figure 2 plots the education and health sector production functions using data from 2000 (Asian DMCs highlighted).<sup>4</sup> As can be seen, both sectors exhibit properties of standard production functions: increases in inputs appear on average to increase output, albeit at a diminishing rate.

TABLE 1  
 CONCEPTUALIZING THE EDUCATION AND HEALTH SECTORS AS PRODUCTION UNITS

| MACRO SYSTEM     | OUTPUT INDICATOR (MDG INDICATOR)  | INPUT INDICATORS   | EXOGENOUS DETERMINANTS   |
|------------------|---|--|--|
| Education Sector | Net primary enrollment ratio (%)  | Primary school expenditure per capita<br>Primary pupil-teacher ratio           | Governance indicators<br>Social capital indicators<br>Poverty rate<br>Population density<br>Percent of total expenditure to sector |
| Health Sector    | Under-five mortality rate per 1,000 (reported inversely as 1,000 minus this rate) | Health expenditure per capita<br>Hospital beds<br>Medical personnel per capita |  |

FIGURE 2  
 EDUCATION AND HEALTH SECTOR PRODUCTION FUNCTIONS



Source: World Development Indicators (2004)

Source: WHO Statistical Information System (2004)

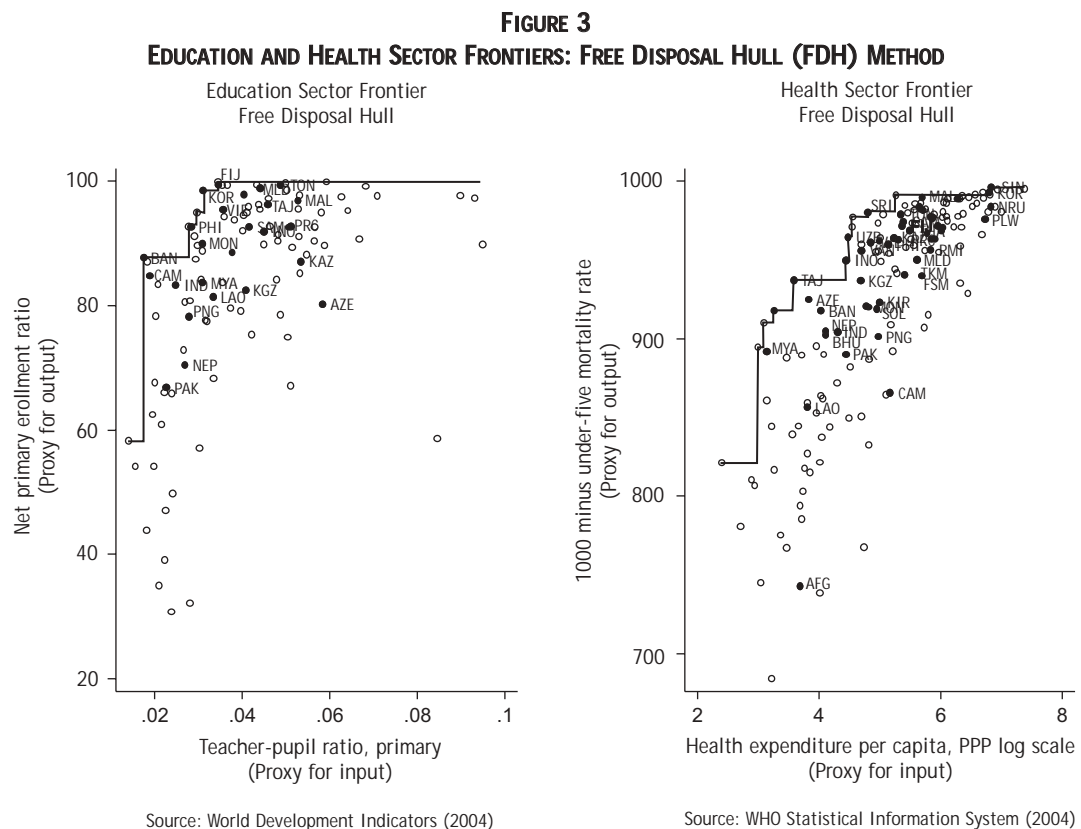
<sup>4</sup> Due to problems related to data completeness, only one input indicator is used as a proxy for this analysis.

## II. EMPIRICS OF EFFICIENCY MEASUREMENT

Econometrically, the frontier production function and efficiency can be estimated using two sets of approaches: (i) a *deterministic* approach, or (ii) a *stochastic* approach (Kumbhakar and Lovell 2000). A key difference between the two approaches has to do with how each conceptualizes the data-generating mechanism. In the deterministic approach, the frontier is estimated such that all observed data points lie below it, and all deviations from the frontier are attributed to inefficiency. In the stochastic approach, at least some of the deviations from the frontier are allowed to be attributable to factors other than inefficiency (e.g., to measurement error).

### A. Deterministic Frontiers

Examples of estimating efficiency using a deterministic frontier approach include free disposal hull (FDH), data envelopment analysis (DEA), and corrected ordinary least squares (COLS). The latter (COLS) is a parametric approach in that the frontier is defined using a specified functional form. The former two (FDH and DEA) are nonparametric in that there is no specific functional form that is imposed on the data. Figure 3 plots estimates of the frontier in the health and education sectors using FDH analysis. As can be seen, FDH derives the frontier using piecewise linear segments. By definition, all points on the frontier have maximum efficiency (i.e., efficiency values of 1). Inefficiencies are calculated by estimating the vertical distance of each point from the FDH frontier.

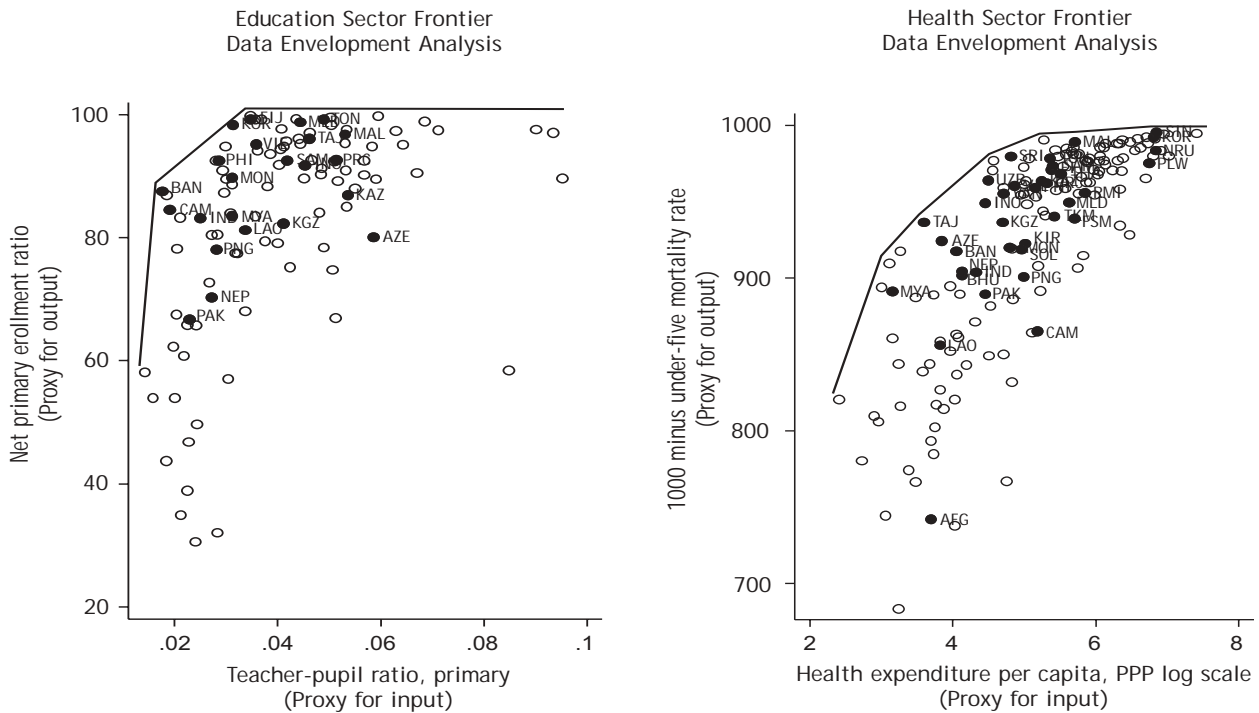


For the education sector, FDH frontier analysis suggests that countries such as Azerbaijan (AZE), Kazakhstan (KAZ), Kyrgyz Republic (KGZ), Lao PDR (LAO), Pakistan (PAK), Papua New Guinea (PNG), and Nepal (NPL) are relatively far from the frontier, i.e., they are relatively inefficient in that their attainment of primary enrollment ratios after controlling for input levels is low. In contrast, countries such as Bangladesh (BAN), Cambodia (CAM), Republic of Korea (KOR), and Philippines (PHI) are practically on the frontier indicating very high efficiency levels in the education sector. For the health sector, FDH analysis suggests that Afghanistan (AFG), Lao PDR (LAO), Pakistan (PAK), Papua New Guinea (PNG), and Tuvalu (TUV) are relatively far from the frontier and, hence, relatively inefficient in attaining lower under-five mortality rates. In contrast, for their resource levels, Malaysia (MAL), Myanmar (MYA), Sri Lanka (SRI), and Tajikistan (TAJ) have relatively efficient health systems.

The same data can be analyzed using DEA methods (Figure 4). The DEA is also nonparametric and uses the least number of linear segments to “envelop” the data: it constructs an upper convex hull on the data. Because it does not wrap the data as tightly as FDH, DEA methods can yield somewhat different conclusions regarding efficiency estimates: e.g., Philippines as per DEA analysis has a lower estimate of education efficiency vis-à-vis that obtained using FDH analysis.

The COLS analysis (not shown) is another deterministic method but uses a parametric regression to fit the data and then move the regression line up by the largest positive residual to ensure that all the data lie below it. Deterministic methods, although more transparent, are usually not a good way to estimate technical efficiency given that they leave no room for measurement error. In particular, the methods can be very sensitive to outlying observations.

**FIGURE 4**  
**EDUCATION AND HEALTH SECTOR FRONTIERS: DATA ENVELOPMENT ANALYSIS (DEA) METHOD**

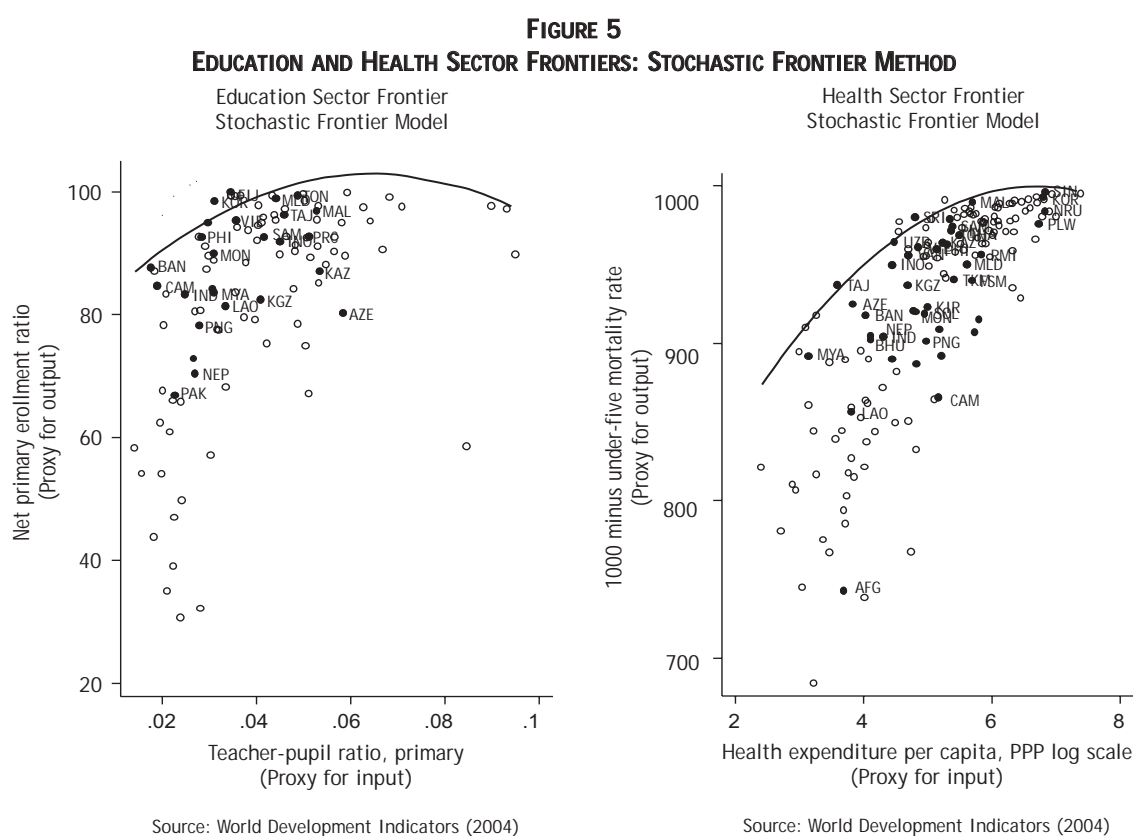


Source: World Development Indicators (2004)

Source: WHO Statistical Information System (2004)

## B. Stochastic Frontiers

Stochastic frontier models allow for random errors in the estimation process. The simplest formulation of a stochastic frontier model is a basic regression model with error decomposition: part of the error term is assumed to represent efficiency and is assumed to follow a one-sided distribution such as the exponential or truncated normal. Figure 5 plots the stochastic frontier using an exponential distribution for efficiency. Some data points in the stochastic method can be higher than the frontier (e.g., Sri Lanka [LKA] and Tajikistan [TJK] for health) if the random noise portion of the error term is large enough.<sup>5</sup>



<sup>5</sup> In addition, as shown in Figure 5, the estimates of the education sector frontier using the stochastic frontier approach indicate that regularity conditions for a production function are violated: there are negative returns after a certain level of resource inputs.

If panel data are available, then stochastic error decomposition methods can be applied using a fixed-effect model. The country with the highest fixed effect is assumed to be the most efficient and the difference between this and each of the other country units is an estimate of the inefficiency. Such panel data methods are often the most robust for measurement of efficiency for several reasons: (i) multiple observations per unit over time usually contain more information and hence make it easier to tease out true efficiency effects in the error term from random noise; (ii) they do not require any distributional assumptions on the efficiency component of the error term; and (iii) they do not require the assumption that the efficiency component be uncorrelated with inputs.

### C. Measuring Efficiency: A Simple Framework

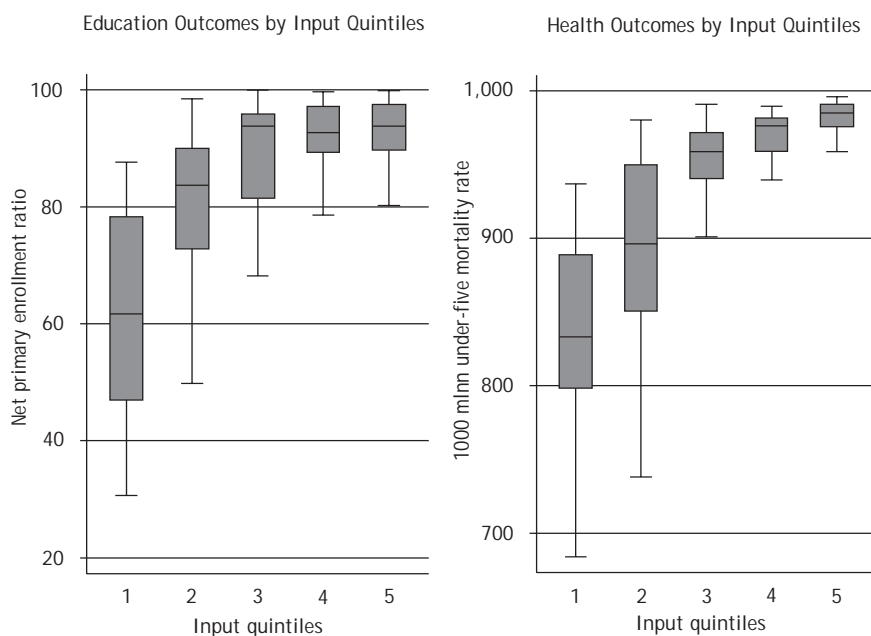
As the above discussion has shown, efficiency in MDG outcome attainment can be measured using frontier production function analysis. Empirically, there are several different ways that the frontier can be estimated from the data. These include deterministic methods such as FDH and DEA as well as stochastic methods such as error-decomposition models. As can be seen from Figures 3 to 5, the estimated efficiency can be different depending on the type of method chosen to estimate it, and hence the absolute values are not comparable across the different methods. Stochastic methods appear to be “truer” to the data-generating mechanism but require technically complex assumptions regarding distributions and error mixtures. Furthermore, some argue that the theoretical assumptions underlying efficiency measurement using such methods are unlikely to hold true in the social sector (Ravallion 2003).

In this subsection, we outline a simpler visual approach to assessing efficiency. This approach does not require econometric assumptions regarding functional form or distributions on the error term. It assesses distance from the “best” performers after roughly controlling for input levels. Input levels are broken into quintiles and then the distribution *within* each quintile of input allows us to assess which countries are at the top end of the distribution (and which ones are at the bottom: the worst performers). Figure 6 plots the distributions of outcomes by input quintiles for the education and health sectors. Within each input quintile, Table 1 reports the top three and bottom three countries in terms of efficiency. These represent countries that, for their input resource levels are the top and bottom performers, respectively, in terms of MDG outcome attainment in the social sectors. There are already some interesting patterns that can be observed: African countries are most likely to be poor performers in both the education and health sectors, even after controlling for inputs. Civil strife appears to be a risk factor for low health outcomes (e.g., Afghanistan and Sierra Leone). Countries that are efficient in education attainment need not be efficient in health attainment (e.g., Azerbaijan and Cambodia). These observations prompt the need for further investigation as to the determinants of efficiency. For instance, we find that the probability of being efficient within a resource group increases with the ability of countries to control corruption, the effect being higher in the health sector vis-à-vis the education sector (Figure 7).

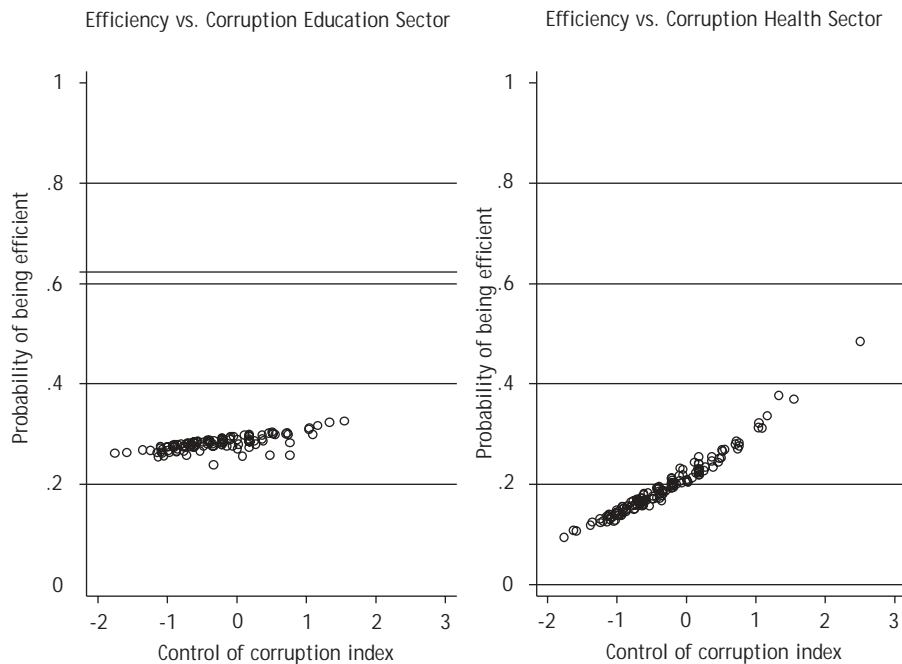
TABLE 2  
EDUCATION AND HEALTH SECTOR OUTCOMES: HIGH VERSUS LOW EFFICIENCY COUNTRIES  
(ASIAN DMCs HIGHLIGHTED)

| INPUT QUINTILE | EDUCATION SECTOR OUTCOMES   |  | HEALTH SECTOR OUTCOMES  |   |
|----------------|---|--|---|---|
|                | HIGH EFFICIENCY   | LOW EFFICIENCY   | HIGH EFFICIENCY   | LOW EFFICIENCY  |
| 1              | <b>Bangladesh (BAN)</b><br>Equatorial Guinea (EQG)<br><b>Cambodia (CAM)</b> | Eritrea (ERI)<br>Burkina Faso (BUF)<br>Niger (NGR)             | <b>Tajikistan (TAJ)</b><br><b>Azerbaijan (AZE)</b><br>Comoros (COM) | Niger (NGR)<br><b>Afghanistan (AFG)</b><br>Sierra Leone (SIE)   |
| 2              | <b>Korea (KOR)</b><br>Jamaica (JAM)<br>Dominican Republic (DOR)             | Ghana (GHA)<br>Tanzania (TNZ)<br>Djibouti (DJI)                | <b>Sri Lanka (SRI)</b><br>Georgia (GEO)<br>Moldova (MOL)            | Central African Republic (CAR)<br>Liberia (LIB)<br>Angola (ANG) |
| 3              | Peru (PER)<br><b>Fiji (FIJ)</b><br>Mexico (MEX)                             | Namibia (NAM)<br>Swaziland (SWA)<br>Kenya (KEN)                | Cuba (CUB)<br>Jamaica (JAM)<br>Libya (LBY)                          | Zimbabwe (ZIM)<br><b>Cambodia (CAM)</b><br>Swaziland (SWA)      |
| 4              | Argentina (ARG)<br>Ecuador (ECU)<br><b>Tonga (TON)</b>                      | Oman (OMA)<br>Serbia & Montenegro (YUG)<br>Ukraine (UKR)       | <b>Malaysia (MAL)</b><br>Belarus (BLR)<br>Dominica (DOM)            | <b>Maldives (MLD)</b><br>Namibia (NAM)<br>Botswana (BOT)        |
| 5              | Barbados (BAR)<br>Seychelles (SEY)<br>Malta (MLT)                           | Armenia (ARM)<br><b>Azerbaijan (AZE)</b><br>Saudi Arabia (SAU) | <b>Singapore (SIN)</b><br>Czech Republic (CZR)<br>Malta (MLT)       | <b>Tuvalu (TUV)</b><br>South Africa (SOA)<br>Brazil (BRA)       |

FIGURE 6  
EDUCATION AND HEALTH SECTORS: OUTCOMES BY INPUT QUINTILES



**FIGURE 7**  
**EDUCATION AND HEALTH SECTORS: EFFICIENCY VERSUS CORRUPTION**



### III. EFFICIENCY OF THE HEALTH SYSTEM IN INDONESIA: A SUBNATIONAL APPLICATION

Arguably, the greatest utility of doing a sectoral efficiency analysis is *within* countries and not *across* countries, the latter often being dismissed by some as being of relevance only for international organizations and donor countries (Haines and Cassels 2004). For policymakers, the most useful information content of a macro system efficiency analysis could come from being able to identify regions or districts within countries that are outperforming others despite resource constraints. Information on efficient subnational regions can be useful for many reasons. First, as a stock-taking exercise, it can help shed light on the extent to which variations in education or health outcomes exist within countries. Second, as mentioned earlier, once such regions or districts are identified, such an analysis can help highlight what factors might be responsible for differences in outcome attainment, and to what extent these are related to resource deficiencies. An oft-cited example is the state of India in Kerala that has stellar education and health outcomes despite having a fairly low income per capita. Good governance, political will, and lower levels of income inequality are often cited as reasons explaining Kerala's efficiency with regard to outcome attainment in the social sector.

This section reports on the results obtained from an exercise done for measuring health system efficiency at the district (*kabupatam*) level in Indonesia.<sup>6</sup> The potential relevance of such an analysis for policymakers is especially apparent given the recent implementation of decentralization in Indonesia. Instead of using a proxy for resource inputs, the Indonesia subnational application used a more general conceptualization of factors influencing outcomes: these factors were taken to be an index of district-level *constraints* to attainment of district-level health system outcomes. The approach follows a framework developed by Hanson et al. (2003). In the empirical application of their approach, they categorize constraints in terms of the level at which they operate and the degree to which the effect of the constraint can be overcome by additional resources (Ranson et al. 2003). Hanson et al. consider constraints at three broad levels: (i) community/household; (ii) health service delivery; and (iii) overall environment. Under community/household constraints they look at factors such as female education (which influences demand for health). For health service delivery, they consider indicators such as vaccination coverage (DPT3), number of nurses per 100,000 population, and health infrastructure (proportion of population living within one hour of health facility). For overall environment, they consider a corruption control index, a government effectiveness index, and GDP per capita. They create an overall index: an unweighted average of all three levels of constraint indicators measuring the degree to which it is likely to be difficult for countries to scale up access to health interventions. Although useful, their framework—by mixing both input indicators (such as nurses per capita) with outcome indicators (such as immunization coverage) and with exogenous determinants (such as governance)—potentially dilutes the recovery of critical information content regarding the efficiency of health systems.

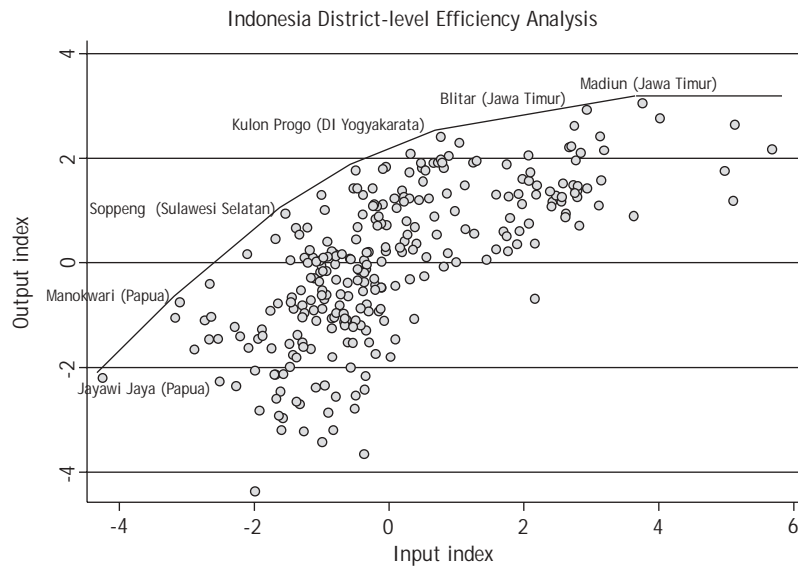
In the application to the district level in Indonesia, we follow a modification of the Hanson et al. (2003) approach. We create an outcome index (composed of a weighted average of complete immunization coverage, skilled birth attendance, iodized salt content, catastrophic expenditure, and life expectancy); and an input index (a weighted average of estimated permanent income, female education, nurses per 100,000, out-of-pocket health expenditure, and access to health facilities).<sup>7</sup> The output index consists of health system outcomes including an index measuring the extent to which the population is protected from impoverishment (catastrophic expenditure). The framework adapts the one used by the World Health Organization in its country-level efficiency analysis (WHO 2000). Figure 8 plots the outcome index versus the input index for 300+ *kabupatams* in Indonesia for which data were available, along with a DEA frontier (some of the districts on or near the frontier are labeled). Figure 9 plots the same data using the simpler approach elaborated in the previous section. As the figures suggest, there are wide variations in district-level health system performance. Resource and environmental constraints are only part of the explanation: other factors such as district-level governance and epidemiological background may need to be studied for further determinants of efficiency analysis. This analysis is part of ongoing research.

---

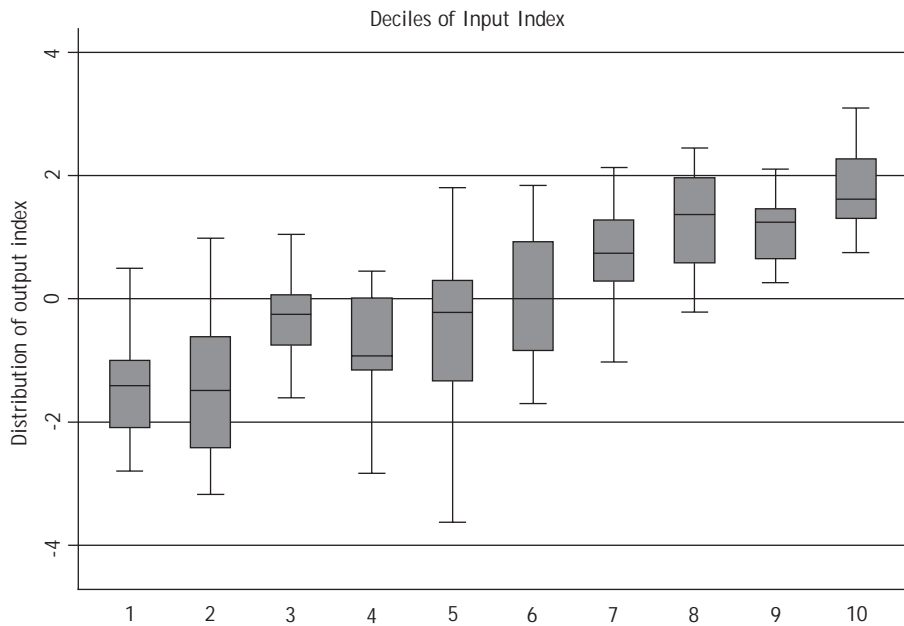
<sup>6</sup> The results of this are forthcoming in a report being prepared by the World Health Organization and the Indonesian National Institute of Health Research and Development.

<sup>7</sup> The weights were derived using confirmatory factor analysis assuming one outcome factor and one input factor. However, the analysis is not sensitive to choice of weights and factors: similar results were obtained using an unweighted index.

**FIGURE 8**  
**INDONESIAN DISTRICT-LEVEL HEALTH SYSTEM EFFICIENCY ANALYSIS--I**



**FIGURE 9**  
**INDONESIAN DISTRICT-LEVEL HEALTH SYSTEM EFFICIENCY ANALYSIS--II**



---

## IV. CONCLUSIONS

Almost all countries in the world have signed on their commitment to attainment of MDG outcomes. At least part of the effort toward attaining MDGs in the social sector has to come from additional resource outlays to these sectors. However, improvements in efficiency at existing resource levels—or those combined with additional resource outlays—provide one more mechanism by which progress can be made. Frontier production analysis provides one simple framework within which to examine these efficiency-related issues at the macro system level such as at the level of the health sector or the education sector.

This paper gives an overview of the application of frontier methods to attain two MDG indicators: net primary enrollment for education and under-five mortality rates for health. We compare the attainment of these MDG outcomes relative to the resource inputs currently available to these sectors. For illustrative purposes, we consider the teacher-pupil ratio as an indicator of the resource inputs to the education sector, and we take health expenditure per capita as a proxy for resources available to the health sector. Although the proxies may be crude, they are used more for expository purposes. We show how the health and education sectors can be viewed as production units and apply different ways of estimating the frontier to the data. We show how the choice of method can yield very different estimates of efficiency. In addition, the complexity of the econometric methods used may not be transparent and the assumptions required too heroic for the data at hand. A simpler approach is to simply derive efficiencies by looking at the distribution of the outcome within different bins of the input index. This method is transparent and easy to explain to nonspecialists (including policymakers) and does not require detailed assumptions regarding the distribution of efficiency. It also easily allows us to assess exogenous (environmental) factors that influence efficiency such as governance and control of corruption, yielding insights into what policy-related or other factors may be constraining MDG attainment in the social sectors.

We demonstrate the application of the simpler method to assess *kabupatam* efficiency in attaining health system outcomes in Indonesia. Further research needs to be done in order to assess why is it that some regions are doing better than others. However, knowledge of knowing who are the best performers is critical to understanding policy options that may allow for improvements in outcomes without—or in addition to—additional resource outlays.

## REFERENCES

- ADB, 2004. *Review of the Asian Development Bank's Poverty Reduction Strategy*. Asian Development Bank, Manila, Philippines.
- Dreze, J., and A. Sen, 1989. *Hunger and Public Action*. Oxford: Clarendon Press.
- Haines, A., and A. Cassels, 2004. "Can the Millennium Development Goals be Attained?" *British Medical Journal* 329:394-7.
- Hanson, K., K. Ranson, V. Oliveira-Cruz, and A. Mills, 2003. "Expanding Access to Priority Health Interventions: A Framework for Understanding the Constraints to Scaling Up." *Journal of International Development* 15:1-14.
- Jayasuria, R., and Q. Wodon, 2003. Efficiency in Reaching the Millennium Development Goals. World Bank Working Paper No. 9, World Bank, Washington, DC.
- Kumbhakar, S., and C. A. K. Lovell, 2000. *Stochastic Frontier Analysis*. Cambridge: Cambridge University Press.
- Ranson, M. K., K. Hanson, V. Oliveira-Cruz, and A. Mills, 2003. "Constraints to Expanding Access to Health Interventions: An Empirical Analysis and Country Typology." *Journal of International Development* 15:15-39.
- Ravallion, M., 2003. On Measuring Aggregate 'Social Efficiency. Policy Research Working Paper No. 3166, World Bank, Washington, DC.
- Tandon, A., J. Lauer, D. B. Evans, and C. J. L. Murray, 2003. "Concepts of Efficiency." In C. J. L. Murray and D. B. Evans, eds., *Health System Performance Assessment: Debates, Methods and Empiricism*. World Health Organization, Geneva.
- UNDP, 2003. *Human Development Report: Millennium Development Goals*. New York: Oxford.
- World Bank, 2004. *Global Monitoring Report: Policies and Actions for Achieving the Millennium Development Goals and Related Outcomes*. World Bank, Washington, DC.
- WHO, 2000. *Health Systems: Improving Performance*. World Health Organization, Geneva.

# PUBLICATIONS FROM THE ECONOMICS AND RESEARCH DEPARTMENT

## ERD WORKING PAPER SERIES (WPS)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- |  |   |
|--|---|
| <p>No. 1 Capitalizing on Globalization<br/>—Barry Eichengreen, January 2002</p> <p>No. 2 Policy-based Lending and Poverty Reduction: An Overview of Processes, Assessment and Options<br/>—Richard Bolt and Manabu Fujimura, January 2002</p> <p>No. 3 The Automotive Supply Chain: Global Trends and Asian Perspectives<br/>—Francisco Veloso and Rajiv Kumar, January 2002</p> <p>No. 4 International Competitiveness of Asian Firms: An Analytical Framework<br/>—Rajiv Kumar and Doren Chadee, February 2002</p> <p>No. 5 The International Competitiveness of Asian Economies in the Apparel Commodity Chain<br/>—Gary Gereffi, February 2002</p> <p>No. 6 Monetary and Financial Cooperation in East Asia—The Chiang Mai Initiative and Beyond<br/>—Pradumna B. Rana, February 2002</p> <p>No. 7 Probing Beneath Cross-national Averages: Poverty, Inequality, and Growth in the Philippines<br/>—Arsenio M. Balisacan and Ernesto M. Pernia, March 2002</p> <p>No. 8 Poverty, Growth, and Inequality in Thailand<br/>—Anil B. Deolalikar, April 2002</p> <p>No. 9 Microfinance in Northeast Thailand: Who Benefits and How Much?<br/>—Brett E. Coleman, April 2002</p> <p>No. 10 Poverty Reduction and the Role of Institutions in Developing Asia<br/>—Anil B. Deolalikar, Alex B. Brilliantes, Jr., Raghav Gaiha, Ernesto M. Pernia, Mary Racelis with the assistance of Marita Concepcion Castro-Guevara, Liza L. Lim, Pilipinas F. Quising, May 2002</p> <p>No. 11 The European Social Model: Lessons for Developing Countries<br/>—Assar Lindbeck, May 2002</p> <p>No. 12 Costs and Benefits of a Common Currency for ASEAN<br/>—Srinivasa Madhur, May 2002</p> <p>No. 13 Monetary Cooperation in East Asia: A Survey<br/>—Raul Fabella, May 2002</p> <p>No. 14 Toward A Political Economy Approach to Policy-based Lending<br/>—George Abonyi, May 2002</p> <p>No. 15 A Framework for Establishing Priorities in a Country Poverty Reduction Strategy<br/>—Ron Duncan and Steve Pollard, June 2002</p> <p>No. 16 The Role of Infrastructure in Land-use Dynamics and Rice Production in Viet Nam's Mekong River Delta<br/>—Christopher Edmonds, July 2002</p> <p>No. 17 Effect of Decentralization Strategy on Macroeconomic Stability in Thailand<br/>—Kanokpan Lao-Araya, August 2002</p> <p>No. 18 Poverty and Patterns of Growth<br/>—Rana Hasan and M. G. Quibria, August 2002</p> <p>No. 19 Why are Some Countries Richer than Others? A Reassessment of Mankiw-Romer-Weil's Test of the Neoclassical Growth Model<br/>—Jesus Felipe and John McCombie, August 2002</p> | <p>No. 20 Modernization and Son Preference in People's Republic of China<br/>—Robin Burgess and Juzhong Zhuang, September 2002</p> <p>No. 21 The Doha Agenda and Development: A View from the Uruguay Round<br/>—J. Michael Finger, September 2002</p> <p>No. 22 Conceptual Issues in the Role of Education Decentralization in Promoting Effective Schooling in Asian Developing Countries<br/>—Jere R. Behrman, Anil B. Deolalikar, and Lee-Ying Son, September 2002</p> <p>No. 23 Promoting Effective Schooling through Education Decentralization in Bangladesh, Indonesia, and Philippines<br/>—Jere R. Behrman, Anil B. Deolalikar, and Lee-Ying Son, September 2002</p> <p>No. 24 Financial Opening under the WTO Agreement in Selected Asian Countries: Progress and Issues<br/>—Yun-Hwan Kim, September 2002</p> <p>No. 25 Revisiting Growth and Poverty Reduction in Indonesia: What Do Subnational Data Show?<br/>—Arsenio M. Balisacan, Ernesto M. Pernia, and Abuzar Asra, October 2002</p> <p>No. 26 Causes of the 1997 Asian Financial Crisis: What Can an Early Warning System Model Tell Us?<br/>—Juzhong Zhuang and J. Malcolm Dowling, October 2002</p> <p>No. 27 Digital Divide: Determinants and Policies with Special Reference to Asia<br/>—M. G. Quibria, Shamsun N. Ahmed, Ted Tschang, and Mari-Len Reyes-Macasaquit, October 2002</p> <p>No. 28 Regional Cooperation in Asia: Long-term Progress, Recent Retrogression, and the Way Forward<br/>—Ramgopal Agarwala and Brahm Prakash, October 2002</p> <p>No. 29 How can Cambodia, Lao PDR, Myanmar, and Viet Nam Cope with Revenue Lost Due to AFTA Tariff Reductions?<br/>—Kanokpan Lao-Araya, November 2002</p> <p>No. 30 Asian Regionalism and Its Effects on Trade in the 1980s and 1990s<br/>—Ramon Clarete, Christopher Edmonds, and Jessica Seddon Wallack, November 2002</p> <p>No. 31 New Economy and the Effects of Industrial Structures on International Equity Market Correlations<br/>—Cyn-Young Park and Jaejoon Woo, December 2002</p> <p>No. 32 Leading Indicators of Business Cycles in Malaysia and the Philippines<br/>—Wenda Zhang and Juzhong Zhuang, December 2002</p> <p>No. 33 Technological Spillovers from Foreign Direct Investment—A Survey<br/>—Emma Xiaoqin Fan, December 2002</p> <p>No. 34 Economic Openness and Regional Development in the Philippines<br/>—Ernesto M. Pernia and Pilipinas F. Quising, January 2003</p> <p>No. 35 Bond Market Development in East Asia:</p> |
|--|---|

- Issues and Challenges  
—*Raul Fabella and Srinivasa Madhur, January 2003*
- No. 36 Environment Statistics in Central Asia: Progress and Prospects  
—*Robert Ballance and Bishnu D. Pant, March 2003*
- No. 37 Electricity Demand in the People's Republic of China: Investment Requirement and Environmental Impact  
—*Bo Q. Lin, March 2003*
- No. 38 Foreign Direct Investment in Developing Asia: Trends, Effects, and Likely Issues for the Forthcoming WTO Negotiations  
—*Douglas H. Brooks, Emma Xiaojin Fan, and Lea R. Sumulong, April 2003*
- No. 39 The Political Economy of Good Governance for Poverty Alleviation Policies  
—*Narayan Lakshman, April 2003*
- No. 40 The Puzzle of Social Capital  
A Critical Review  
—*M. G. Quibria, May 2003*
- No. 41 Industrial Structure, Technical Change, and the Role of Government in Development of the Electronics and Information Industry in Taipei, China  
—*Yeo Lin, May 2003*
- No. 42 Economic Growth and Poverty Reduction in Viet Nam  
—*Arsenio M. Balisacan, Ernesto M. Pernia, and Gemma Esther B. Estrada, June 2003*
- No. 43 Why Has Income Inequality in Thailand Increased? An Analysis Using 1975-1998 Surveys  
—*Taizo Motonishi, June 2003*
- No. 44 Welfare Impacts of Electricity Generation Sector Reform in the Philippines  
—*Natsuko Toba, June 2003*
- No. 45 A Review of Commitment Savings Products in Developing Countries  
—*Nava Ashraf, Nathalie Gons, Dean S. Karlan, and Wesley Yin, July 2003*
- No. 46 Local Government Finance, Private Resources, and Local Credit Markets in Asia  
—*Roberto de Vera and Yun-Hwan Kim, October 2003*
- No. 47 Excess Investment and Efficiency Loss During Reforms: The Case of Provincial-level Fixed-Asset Investment in People's Republic of China  
—*Duo Qin and Haiyan Song, October 2003*
- No. 48 Is Export-led Growth Passe? Implications for Developing Asia  
—*Jesus Felipe, December 2003*
- No. 49 Changing Bank Lending Behavior and Corporate Financing in Asia—Some Research Issues  
—*Emma Xiaojin Fan and Akiko Terada-Hagiwara, December 2003*
- No. 50 Is People's Republic of China's Rising Services Sector Leading to Cost Disease?  
—*Duo Qin, March 2004*
- No. 51 Poverty Estimates in India: Some Key Issues  
—*Savita Sharma, May 2004*
- No. 52 Restructuring and Regulatory Reform in the Power Sector: Review of Experience and Issues  
—*Peter Choynowski, May 2004*
- No. 53 Competitiveness, Income Distribution, and Growth in the Philippines: What Does the Long-run Evidence Show?  
—*Jesus Felipe and Grace C. Sipin, June 2004*
- No. 54 Practices of Poverty Measurement and Poverty Profile of Bangladesh  
—*Faizuddin Ahmed, August 2004*
- No. 55 Experience of Asian Asset Management Companies: Do They Increase Moral Hazard?  
—*Evidence from Thailand*
- Akiko Terada-Hagiwara and Gloria Pasadilla, September 2004*
- No. 56 Viet Nam: Foreign Direct Investment and Postcrisis Regional Integration  
—*Vittorio Leproux and Douglas H. Brooks, September 2004*
- No. 57 Practices of Poverty Measurement and Poverty Profile of Nepal  
—*Devendra Chhetry, September 2004*
- No. 58 Monetary Poverty Estimates in Sri Lanka: Selected Issues  
—*Neranjana Gunetilleke and Dinushka Senanayake, October 2004*
- No. 59 Labor Market Distortions, Rural-Urban Inequality, and the Opening of People's Republic of China's Economy  
—*Thomas Hertel and Fan Zhai, November 2004*
- No. 60 Measuring Competitiveness in the World's Smallest Economies: Introducing the SSMECI  
—*Ganeshan Wignaraja and David Joiner, November 2004*
- No. 61 Foreign Exchange Reserves, Exchange Rate Regimes, and Monetary Policy: Issues in Asia  
—*Akiko Terada-Hagiwara, January 2005*
- No. 62 A Small Macroeconometric Model of the Philippine Economy  
—*Geoffrey Ducanes, Marie Anne Cagas, Duo Qin, Pilipinas Quising, and Nedelyn Magtibay-Ramos, January 2005*
- No. 63 Developing the Market for Local Currency Bonds by Foreign Issuers: Lessons from Asia  
—*Tobias Hoschka, February 2005*
- No. 64 Empirical Assessment of Sustainability and Feasibility of Government Debt: The Philippines Case  
—*Duo Qin, Marie Anne Cagas, Geoffrey Ducanes, Nedelyn Magtibay-Ramos, and Pilipinas Quising, February 2005*
- No. 65 Poverty and Foreign Aid  
Evidence from Cross-Country Data  
—*Abuzar Asra, Gemma Estrada, Yangseom Kim, and M. G. Quibria, March 2005*
- No. 66 Measuring Efficiency of Macro Systems: An Application to Millennium Development Goal Attainment  
—*Ajay Tandon, March 2005*

## ERD TECHNICAL NOTE SERIES (TNS)

(Published in-house; Available through ADB Office of External Relations; Free of Charge)

- |       |   |        |  |
|-------|---|--------|--|
| No. 1 | Contingency Calculations for Environmental Impacts with Unknown Monetary Values<br>—David Dole, February 2002   | No. 7  | Strengthening the Economic Analysis of Natural Resource Management Projects<br>—Keith Ward, September 2003   |
| No. 2 | Integrating Risk into ADB's Economic Analysis of Projects<br>—Nigel Rayner, Anneli Lagman-Martin, and Keith Ward, June 2002                             | No. 8  | Testing Savings Product Innovations Using an Experimental Methodology<br>—Nava Ashraf, Dean S. Karlan, and Wesley Yin, November 2003                 |
| No. 3 | Measuring Willingness to Pay for Electricity<br>—Peter Choynowski, July 2002  | No. 9  | Setting User Charges for Public Services: Policies and Practice at the Asian Development Bank<br>—David Dole, December 2003                          |
| No. 4 | Economic Issues in the Design and Analysis of a Wastewater Treatment Project<br>—David Dole, July 2002  | No. 10 | Beyond Cost Recovery: Setting User Charges for Financial, Economic, and Social Goals<br>—David Dole and Ian Bartlett, January 2004                   |
| No. 5 | An Analysis and Case Study of the Role of Environmental Economics at the Asian Development Bank<br>—David Dole and Piya Abeygunawardena, September 2002 | No. 11 | Shadow Exchange Rates for Project Economic Analysis: Toward Improving Practice at the Asian Development Bank<br>—Anneli Lagman-Martin, February 2004 |
| No. 6 | Economic Analysis of Health Projects: A Case Study in Cambodia<br>—Erik Bloom and Peter Choynowski, May 2003  |        |  |

## ERD POLICY BRIEF SERIES (PBS)

(Published in-house; Available through ADB Office of External Relations; Free of charge)

- |        |  |        |  |
|--------|--|--------|--|
| No. 1  | Is Growth Good Enough for the Poor?<br>—Ernesto M. Pernia, October 2001  | No. 11 | Implications of a US Dollar Depreciation for Asian Developing Countries<br>—Emma Fan, July 2002  |
| No. 2  | India's Economic Reforms<br>What Has Been Accomplished?<br>What Remains to Be Done?<br>—Arvind Panagariya, November 2001                                       | No. 12 | Dangers of Deflation<br>—D. Brooks and Pilipinas Quising, December 2002  |
| No. 3  | Unequal Benefits of Growth in Viet Nam<br>—Indu Bhushan, Erik Bloom, and Nguyen Minh Thang, January 2002   | No. 13 | Infrastructure and Poverty Reduction—<br>What is the Connection?<br>—Ifzal Ali and Ernesto Pernia, January 2003                        |
| No. 4  | Is Volatility Built into Today's World Economy?<br>—J. Malcolm Dowling and J.P. Verbiest, February 2002  | No. 14 | Infrastructure and Poverty Reduction—<br>Making Markets Work for the Poor<br>—Xianbin Yao, May 2003                                    |
| No. 5  | What Else Besides Growth Matters to Poverty Reduction? Philippines<br>—Arsenio M. Balisacan and Ernesto M. Pernia, February 2002                               | No. 15 | SARS: Economic Impacts and Implications<br>—Emma Xiaojin Fan, May 2003   |
| No. 6  | Achieving the Twin Objectives of Efficiency and Equity: Contracting Health Services in Cambodia<br>—Indu Bhushan, Sheryl Keller, and Brad Schwartz, March 2002 | No. 16 | Emerging Tax Issues: Implications of Globalization and Technology<br>—Kanokpan Lao Araya, May 2003                                     |
| No. 7  | Causes of the 1997 Asian Financial Crisis: What Can an Early Warning System Model Tell Us?<br>—Juzhong Zhuang and Malcolm Dowling, June 2002                   | No. 17 | Pro-Poor Growth: What is It and Why is It Important?<br>—Ernesto M. Pernia, May 2003   |
| No. 8  | The Role of Preferential Trading Arrangements in Asia<br>—Christopher Edmonds and Jean-Pierre Verbiest, July 2002  | No. 18 | Public-Private Partnership for Competitiveness<br>—Jesus Felipe, June 2003   |
| No. 9  | The Doha Round: A Development Perspective<br>—Jean-Pierre Verbiest, Jeffrey Liang, and Lea Sumulong, July 2002   | No. 19 | Reviving Asian Economic Growth Requires Further Reforms<br>—Ifzal Ali, June 2003   |
| No. 10 | Is Economic Openness Good for Regional Development and Poverty Reduction? The Philippines<br>—E. M. Pernia and Pilipinas Quising, October 2002                 | No. 20 | The Millennium Development Goals and Poverty: Are We Counting the World's Poor Right?<br>—M. G. Quibria, July 2003                     |
|        |  | No. 21 | Trade and Poverty: What are the Connections?<br>—Douglas H. Brooks, July 2003  |
|        |  | No. 22 | Adapting Education to the Global Economy<br>—Olivier Dupriez, September 2003   |
|        |  | No. 23 | Avian Flu: An Economic Assessment for Selected Developing Countries in Asia<br>—Jean-Pierre Verbiest and Charissa Castillo, March 2004 |

- |   |  |
|---|--|
| <p>No. 25 Purchasing Power Parities and the International Comparison Program in a Globalized World<br/>—<i>Bishnu Pant, March 2004</i></p> <p>No. 26 A Note on Dual/Multiple Exchange Rates<br/>—<i>Emma Xiaoqin Fan, May 2004</i></p> <p>No. 27 Inclusive Growth for Sustainable Poverty Reduction in Developing Asia: The Enabling Role of Infrastructure Development<br/>—<i>Ifzal Ali and Xianbin Yao, May 2004</i></p> <p>No. 28 Higher Oil Prices: Asian Perspectives and Implications for 2004-2005<br/>—<i>Cyn-Young Park, June 2004</i></p> <p>No. 29 Accelerating Agriculture and Rural Development for Inclusive Growth: Policy Implications for Developing Asia<br/>—<i>Richard Bolt, July 2004</i></p> <p>No. 30 Living with Higher Interest Rates: Is Asia Ready?</p> | <p>—<i>Cyn-Young Park, August 2004</i></p> <p>No. 31 Reserve Accumulation, Sterilization, and Policy Dilemma<br/>—<i>Akiko Terada-Hagiwara, October 2004</i></p> <p>32 The Primacy of Reforms in the Emergence of People's Republic of China and India<br/>—<i>Ifzal Ali and Emma Xiaoqin Fan, November 2004</i></p> <p>33 Population Health and Foreign Direct Investment: Does Poor Health Signal Poor Government Effectiveness?<br/>—<i>Ajay Tandon, January 2005</i></p> <p>34 Financing Infrastructure Development: Asian Developing Countries Need to Tap Bond Markets More Rigorously<br/>—<i>Yun-Hwan Kim, February 2005</i></p> |
|---|--|

## SPECIAL STUDIES, COMPLIMENTARY

(Available through ADB Office of External Relations)

- |  |  |
|--|--|
| <p>1. Improving Domestic Resource Mobilization Through Financial Development: Overview <i>September 1985</i></p> <p>2. Improving Domestic Resource Mobilization Through Financial Development: Bangladesh <i>July 1986</i></p> <p>3. Improving Domestic Resource Mobilization Through Financial Development: Sri Lanka <i>April 1987</i></p> <p>4. Improving Domestic Resource Mobilization Through Financial Development: India <i>December 1987</i></p> <p>5. Financing Public Sector Development Expenditure in Selected Countries: Overview <i>January 1988</i></p> <p>6. Study of Selected Industries: A Brief Report <i>April 1988</i></p> <p>7. Financing Public Sector Development Expenditure in Selected Countries: Bangladesh <i>June 1988</i></p> <p>8. Financing Public Sector Development Expenditure in Selected Countries: India <i>June 1988</i></p> <p>9. Financing Public Sector Development Expenditure in Selected Countries: Indonesia <i>June 1988</i></p> <p>10. Financing Public Sector Development Expenditure in Selected Countries: Nepal <i>June 1988</i></p> <p>11. Financing Public Sector Development Expenditure in Selected Countries: Pakistan <i>June 1988</i></p> <p>12. Financing Public Sector Development Expenditure in Selected Countries: Philippines <i>June 1988</i></p> <p>13. Financing Public Sector Development Expenditure in Selected Countries: Thailand <i>June 1988</i></p> <p>14. Towards Regional Cooperation in South Asia: ADB/EWC Symposium on Regional Cooperation in South Asia <i>February 1988</i></p> <p>15. Evaluating Rice Market Intervention Policies: Some Asian Examples <i>April 1988</i></p> <p>16. Improving Domestic Resource Mobilization Through Financial Development: Nepal <i>November 1988</i></p> <p>17. Foreign Trade Barriers and Export Growth <i>September 1988</i></p> | <p>18. The Role of Small and Medium-Scale Industries in the Industrial Development of the Philippines <i>April 1989</i></p> <p>19. The Role of Small and Medium-Scale Manufacturing Industries in Industrial Development: The Experience of Selected Asian Countries <i>January 1990</i></p> <p>20. National Accounts of Vanuatu, 1983-1987 <i>January 1990</i></p> <p>21. National Accounts of Western Samoa, 1984-1986 <i>February 1990</i></p> <p>22. Human Resource Policy and Economic Development: Selected Country Studies <i>July 1990</i></p> <p>23. Export Finance: Some Asian Examples <i>September 1990</i></p> <p>24. National Accounts of the Cook Islands, 1982-1986 <i>September 1990</i></p> <p>25. Framework for the Economic and Financial Appraisal of Urban Development Sector Projects <i>January 1994</i></p> <p>26. Framework and Criteria for the Appraisal and Socioeconomic Justification of Education Projects <i>January 1994</i></p> <p>27. Investing in Asia 1997 (Co-published with OECD)</p> <p>28. The Future of Asia in the World Economy 1998 (Co-published with OECD)</p> <p>29. Financial Liberalisation in Asia: Analysis and Prospects 1999 (Co-published with OECD)</p> <p>30. Sustainable Recovery in Asia: Mobilizing Resources for Development 2000 (Co-published with OECD)</p> <p>31. Technology and Poverty Reduction in Asia and the Pacific 2001 (Co-published with OECD)</p> <p>32. Asia and Europe 2002 (Co-published with OECD)</p> <p>33. Economic Analysis: Retrospective 2003</p> <p>34. Economic Analysis: Retrospective: 2003 Update 2004</p> <p>35. Development Indicators Reference Manual: Concepts and Definitions 2004</p> |
|--|--|

## OLD MONOGRAPH SERIES

(Available through ADB Office of External Relations; Free of charge)

## EDRC REPORT SERIES (ER)

- No. 1 ASEAN and the Asian Development Bank  
—*Seiji Naya, April 1982*
- No. 2 Development Issues for the Developing East and Southeast Asian Countries and International Cooperation  
—*Seiji Naya and Graham Abbott, April 1982*
- No. 3 Aid, Savings, and Growth in the Asian Region  
—*J. Malcolm Dowling and Ulrich Hiemenz, April 1982*
- No. 4 Development-oriented Foreign Investment and the Role of ADB  
—*Kiyoshi Kojima, April 1982*
- No. 5 The Multilateral Development Banks and the International Economy's Missing Public Sector  
—*John Lewis, June 1982*
- No. 6 Notes on External Debt of DMCs  
—*Evelyn Go, July 1982*
- No. 7 Grant Element in Bank Loans  
—*Dal Hyun Kim, July 1982*
- No. 8 Shadow Exchange Rates and Standard Conversion Factors in Project Evaluation  
—*Peter Warr, September 1982*
- No. 9 Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues  
—*Mathias Bruch and Ulrich Hiemenz, January 1983*
- No. 10 A Note on the Third Ministerial Meeting of GATT  
—*Jungsoo Lee, January 1983*
- No. 11 Macroeconomic Forecasts for the Republic of China, Hong Kong, and Republic of Korea  
—*J.M. Dowling, January 1983*
- No. 12 ASEAN: Economic Situation and Prospects  
—*Seiji Naya, March 1983*
- No. 13 The Future Prospects for the Developing Countries of Asia  
—*Seiji Naya, March 1983*
- No. 14 Energy and Structural Change in the Asia-Pacific Region, Summary of the Thirteenth Pacific Trade and Development Conference  
—*Seiji Naya, March 1983*
- No. 15 A Survey of Empirical Studies on Demand for Electricity with Special Emphasis on Price Elasticity of Demand  
—*Wisarn Pupphavesa, June 1983*
- No. 16 Determinants of Paddy Production in Indonesia: 1972-1981—A Simultaneous Equation Model Approach  
—*T.K. Jayaraman, June 1983*
- No. 17 The Philippine Economy: Economic Forecasts for 1983 and 1984  
—*J.M. Dowling, E. Go, and C.N. Castillo, June 1983*
- No. 18 Economic Forecast for Indonesia  
—*J.M. Dowling, H.Y. Kim, Y.K. Wang, and C.N. Castillo, June 1983*
- No. 19 Relative External Debt Situation of Asian Developing Countries: An Application of Ranking Method  
—*Jungsoo Lee, June 1983*
- No. 20 New Evidence on Yields, Fertilizer Application, and Prices in Asian Rice Production  
—*William James and Teresita Ramirez, July 1983*
- No. 21 Inflationary Effects of Exchange Rate Changes in Nine Asian LDCs  
—*Pradumna B. Rana and J. Malcolm Dowling, Jr., December 1983*
- No. 22 Effects of External Shocks on the Balance of Payments, Policy Responses, and Debt Problems of Asian Developing Countries  
—*Seiji Naya, December 1983*
- No. 23 Changing Trade Patterns and Policy Issues: The Prospects for East and Southeast Asian Developing Countries  
—*Seiji Naya and Ulrich Hiemenz, February 1984*
- No. 24 Small-Scale Industries in Asian Economic Development: Problems and Prospects  
—*Seiji Naya, February 1984*
- No. 25 A Study on the External Debt Indicators Applying Logit Analysis  
—*Jungsoo Lee and Clarita Barretto, February 1984*
- No. 26 Alternatives to Institutional Credit Programs in the Agricultural Sector of Low-Income Countries  
—*Jennifer Sour, March 1984*
- No. 27 Economic Scene in Asia and Its Special Features  
—*Kedar N. Kohli, November 1984*
- No. 28 The Effect of Terms of Trade Changes on the Balance of Payments and Real National Income of Asian Developing Countries  
—*Jungsoo Lee and Lutgarda Labios, January 1985*
- No. 29 Cause and Effect in the World Sugar Market: Some Empirical Findings 1951-1982  
—*Yoshihiro Iwasaki, February 1985*
- No. 30 Sources of Balance of Payments Problem in the 1970s: The Asian Experience  
—*Pradumna Rana, February 1985*
- No. 31 India's Manufactured Exports: An Analysis of Supply Sectors  
—*Ifzal Ali, February 1985*
- No. 32 Meeting Basic Human Needs in Asian Developing Countries  
—*Jungsoo Lee and Emma Banaria, March 1985*
- No. 33 The Impact of Foreign Capital Inflow on Investment and Economic Growth in Developing Asia  
—*Evelyn Go, May 1985*
- No. 34 The Climate for Energy Development in the Pacific and Asian Region: Priorities and Perspectives  
—*V.V. Desai, April 1986*
- No. 35 Impact of Appreciation of the Yen on Developing Member Countries of the Bank  
—*Jungsoo Lee, Pradumna Rana, and Ifzal Ali, May 1986*
- No. 36 Smuggling and Domestic Economic Policies in Developing Countries  
—*A.H.M.N. Chowdhury, October 1986*
- No. 37 Public Investment Criteria: Economic Internal Rate of Return and Equalizing Discount Rate  
—*Ifzal Ali, November 1986*
- No. 38 Review of the Theory of Neoclassical Political Economy: An Application to Trade Policies  
—*M.G. Quibria, December 1986*
- No. 39 Factors Influencing the Choice of Location: Local and Foreign Firms in the Philippines  
—*E.M. Pernia and A.N. Herrin, February 1987*
- No. 40 A Demographic Perspective on Developing Asia and Its Relevance to the Bank  
—*E.M. Pernia, May 1987*
- No. 41 Emerging Issues in Asia and Social Cost Benefit Analysis  
—*I. Ali, September 1988*
- No. 42 Shifting Revealed Comparative Advantage: Experiences of Asian and Pacific Developing

- Countries  
—*P.B. Rana, November 1988*
- No. 43 Agricultural Price Policy in Asia: Issues and Areas of Reforms  
—*I. Ali, November 1988*
- No. 44 Service Trade and Asian Developing Economies  
—*M.G. Quibria, October 1989*
- No. 45 A Review of the Economic Analysis of Power Projects in Asia and Identification of Areas of Improvement  
—*I. Ali, November 1989*
- No. 46 Growth Perspective and Challenges for Asia: Areas for Policy Review and Research  
—*I. Ali, November 1989*
- No. 47 An Approach to Estimating the Poverty Alleviation Impact of an Agricultural Project  
—*I. Ali, January 1990*
- No. 48 Economic Growth Performance of Indonesia, the Philippines, and Thailand: The Human Resource Dimension  
—*E.M. Pernia, January 1990*
- No. 49 Foreign Exchange and Fiscal Impact of a Project: A Methodological Framework for Estimation  
—*I. Ali, February 1990*
- No. 50 Public Investment Criteria: Financial and Economic Internal Rates of Return  
—*I. Ali, April 1990*
- No. 51 Evaluation of Water Supply Projects: An Economic Framework  
—*Arlene M. Tadler, June 1990*
- No. 52 Interrelationship Between Shadow Prices, Project Investment, and Policy Reforms: An Analytical Framework  
—*I. Ali, November 1990*
- No. 53 Issues in Assessing the Impact of Project and Sector Adjustment Lending  
—*I. Ali, December 1990*
- No. 54 Some Aspects of Urbanization and the Environment in Southeast Asia  
—*Ernesto M. Pernia, January 1991*
- No. 55 Financial Sector and Economic Development: A Survey  
—*Jungsoo Lee, September 1991*
- No. 56 A Framework for Justifying Bank-Assisted Education Projects in Asia: A Review of the Socioeconomic Analysis and Identification of Areas of Improvement  
—*Etienne Van De Walle, February 1992*
- No. 57 Medium-term Growth-Stabilization Relationship in Asian Developing Countries and Some Policy Considerations  
—*Yun-Hwan Kim, February 1993*
- No. 58 Urbanization, Population Distribution, and Economic Development in Asia  
—*Ernesto M. Pernia, February 1993*
- No. 59 The Need for Fiscal Consolidation in Nepal: The Results of a Simulation  
—*Filippo di Mauro and Ronald Antonio Butiong, July 1993*
- No. 60 A Computable General Equilibrium Model of Nepal  
—*Timothy Buehrer and Filippo di Mauro, October 1993*
- No. 61 The Role of Government in Export Expansion in the Republic of Korea: A Revisit  
—*Yun-Hwan Kim, February 1994*
- No. 62 Rural Reforms, Structural Change, and Agricultural Growth in the People's Republic of China  
—*Bo Lin, August 1994*
- No. 63 Incentives and Regulation for Pollution Abatement with an Application to Waste Water Treatment  
—*Sudipto Mundle, U. Shankar, and Shekhar Mehta, October 1995*
- No. 64 Saving Transitions in Southeast Asia  
—*Frank Harrigan, February 1996*
- No. 65 Total Factor Productivity Growth in East Asia: A Critical Survey  
—*Jesus Felipe, September 1997*
- No. 66 Foreign Direct Investment in Pakistan: Policy Issues and Operational Implications  
—*Ashfaq H. Khan and Yun-Hwan Kim, July 1999*
- No. 67 Fiscal Policy, Income Distribution and Growth  
—*Sailesh K. Jha, November 1999*

### ECONOMIC STAFF PAPERS (ES)

- No. 1 International Reserves: Factors Determining Needs and Adequacy  
—*Evelyn Go, May 1981*
- No. 2 Domestic Savings in Selected Developing Asian Countries  
—*Basil Moore, assisted by A.H.M. Nuruddin Chowdhury, September 1981*
- No. 3 Changes in Consumption, Imports and Exports of Oil Since 1973: A Preliminary Survey of the Developing Member Countries of the Asian Development Bank  
—*Dal Hyun Kim and Graham Abbott, September 1981*
- No. 4 By-Passed Areas, Regional Inequalities, and Development Policies in Selected Southeast Asian Countries  
—*William James, October 1981*
- No. 5 Asian Agriculture and Economic Development  
—*William James, March 1982*
- No. 6 Inflation in Developing Member Countries: An Analysis of Recent Trends  
—*A.H.M. Nuruddin Chowdhury and J. Malcolm Dowling, March 1982*
- No. 7 Industrial Growth and Employment in Developing Asian Countries: Issues and Perspectives for the Coming Decade  
—*Ulrich Hiemenz, March 1982*
- No. 8 Petrodollar Recycling 1973-1980. Part I: Regional Adjustments and the World Economy  
—*Burnham Campbell, April 1982*
- No. 9 Developing Asia: The Importance of Domestic Policies  
—*Economics Office Staff under the direction of Seiji Naya, May 1982*
- No. 10 Financial Development and Household Savings: Issues in Domestic Resource Mobilization in Asian Developing Countries  
—*Wan-Soon Kim, July 1982*
- No. 11 Industrial Development: Role of Specialized Financial Institutions  
—*Kedar N. Kohli, August 1982*
- No. 12 Petrodollar Recycling 1973-1980. Part II: Debt Problems and an Evaluation of Suggested Remedies  
—*Burnham Campbell, September 1982*
- No. 13 Credit Rationing, Rural Savings, and Financial Policy in Developing Countries  
—*William James, September 1982*
- No. 14 Small and Medium-Scale Manufacturing Establishments in ASEAN Countries: Perspectives and Policy Issues

- Mathias Bruch and Ulrich Hiemenz, March 1983*
- No. 15 Income Distribution and Economic Growth in Developing Asian Countries  
—*J. Malcolm Dowling and David Soo, March 1983*
- No. 16 Long-Run Debt-Servicing Capacity of Asian Developing Countries: An Application of Critical Interest Rate Approach  
—*Jungsoo Lee, June 1983*
- No. 17 External Shocks, Energy Policy, and Macroeconomic Performance of Asian Developing Countries: A Policy Analysis  
—*William James, July 1983*
- No. 18 The Impact of the Current Exchange Rate System on Trade and Inflation of Selected Developing Member Countries  
—*Pradumna Rana, September 1983*
- No. 19 Asian Agriculture in Transition: Key Policy Issues  
—*William James, September 1983*
- No. 20 The Transition to an Industrial Economy in Monsoon Asia  
—*Harry T. Oshima, October 1983*
- No. 21 The Significance of Off-Farm Employment and Incomes in Post-War East Asian Growth  
—*Harry T. Oshima, January 1984*
- No. 22 Income Distribution and Poverty in Selected Asian Countries  
—*John Malcolm Dowling, Jr., November 1984*
- No. 23 ASEAN Economies and ASEAN Economic Cooperation  
—*Narongchai Akrasanee, November 1984*
- No. 24 Economic Analysis of Power Projects  
—*Nitin Desai, January 1985*
- No. 25 Exports and Economic Growth in the Asian Region  
—*Pradumna Rana, February 1985*
- No. 26 Patterns of External Financing of DMCs  
—*E. Go, May 1985*
- No. 27 Industrial Technology Development the Republic of Korea  
—*S.Y. Lo, July 1985*
- No. 28 Risk Analysis and Project Selection: A Review of Practical Issues  
—*J.K. Johnson, August 1985*
- No. 29 Rice in Indonesia: Price Policy and Comparative Advantage  
—*I. Ali, January 1986*
- No. 30 Effects of Foreign Capital Inflows on Developing Countries of Asia  
—*Jungsoo Lee, Pradumna B. Rana, and Yoshihiro Iwasaki, April 1986*
- No. 31 Economic Analysis of the Environmental Impacts of Development Projects  
—*John A. Dixon et al., EAPI, East-West Center, August 1986*
- No. 32 Science and Technology for Development: Role of the Bank  
—*Kedar N. Kohli and Ifzal Ali, November 1986*
- No. 33 Satellite Remote Sensing in the Asian and Pacific Region  
—*Mohan Sundara Rajan, December 1986*
- No. 34 Changes in the Export Patterns of Asian and Pacific Developing Countries: An Empirical Overview  
—*Pradumna B. Rana, January 1987*
- No. 35 Agricultural Price Policy in Nepal  
—*Gerald C. Nelson, March 1987*
- No. 36 Implications of Falling Primary Commodity Prices for Agricultural Strategy in the Philippines  
—*Ifzal Ali, September 1987*
- No. 37 Determining Irrigation Charges: A Framework  
—*Prabhakar B. Ghate, October 1987*
- No. 38 The Role of Fertilizer Subsidies in Agricultural Production: A Review of Select Issues  
—*M.G. Quibria, October 1987*
- No. 39 Domestic Adjustment to External Shocks in Developing Asia  
—*Jungsoo Lee, October 1987*
- No. 40 Improving Domestic Resource Mobilization through Financial Development: Indonesia  
—*Philip Erquiaga, November 1987*
- No. 41 Recent Trends and Issues on Foreign Direct Investment in Asian and Pacific Developing Countries  
—*P.B. Rana, March 1988*
- No. 42 Manufactured Exports from the Philippines: A Sector Profile and an Agenda for Reform  
—*I. Ali, September 1988*
- No. 43 A Framework for Evaluating the Economic Benefits of Power Projects  
—*I. Ali, August 1989*
- No. 44 Promotion of Manufactured Exports in Pakistan  
—*Jungsoo Lee and Yoshihiro Iwasaki, September 1989*
- No. 45 Education and Labor Markets in Indonesia: A Sector Survey  
—*Ernesto M. Pernia and David N. Wilson, September 1989*
- No. 46 Industrial Technology Capabilities and Policies in Selected ADCs  
—*Hiroshi Kakazu, June 1990*
- No. 47 Designing Strategies and Policies for Managing Structural Change in Asia  
—*Ifzal Ali, June 1990*
- No. 48 The Completion of the Single European Community Market in 1992: A Tentative Assessment of its Impact on Asian Developing Countries  
—*J.P. Verbiest and Min Tang, June 1991*
- No. 49 Economic Analysis of Investment in Power Systems  
—*Ifzal Ali, June 1991*
- No. 50 External Finance and the Role of Multilateral Financial Institutions in South Asia: Changing Patterns, Prospects, and Challenges  
—*Jungsoo Lee, November 1991*
- No. 51 The Gender and Poverty Nexus: Issues and Policies  
—*M.G. Quibria, November 1993*
- No. 52 The Role of the State in Economic Development: Theory, the East Asian Experience, and the Malaysian Case  
—*Jason Brown, December 1993*
- No. 53 The Economic Benefits of Potable Water Supply Projects to Households in Developing Countries  
—*Dale Whittington and Venkateswarlu Swarna, January 1994*
- No. 54 Growth Triangles: Conceptual Issues and Operational Problems  
—*Min Tang and Myo Thant, February 1994*
- No. 55 The Emerging Global Trading Environment and Developing Asia  
—*Arvind Panagariya, M.G. Quibria, and Narhari Rao, July 1996*
- No. 56 Aspects of Urban Water and Sanitation in the Context of Rapid Urbanization in Developing Asia  
—*Ernesto M. Pernia and Stella LF. Alabastro, September 1997*
- No. 57 Challenges for Asia's Trade and Environment  
—*Douglas H. Brooks, January 1998*
- No. 58 Economic Analysis of Health Sector Projects—A Review of Issues, Methods, and Approaches  
—*Ramesh Adhikari, Paul Gertler, and Anneli Lagman, March 1999*
- No. 59 The Asian Crisis: An Alternate View  
—*Rajiv Kumar and Bibek Debroy, July 1999*
- No. 60 Social Consequences of the Financial Crisis in Asia  
—*James C. Knowles, Ernesto M. Pernia, and Mary Racelis, November 1999*

## OCCASIONAL PAPERS (OP)

- |  |   |
|--|---|
| <p>No. 1 Poverty in the People's Republic of China: Recent Developments and Scope for Bank Assistance<br/>—<i>K.H. Moinuddin, November 1992</i></p> <p>No. 2 The Eastern Islands of Indonesia: An Overview of Development Needs and Potential<br/>—<i>Brien K. Parkinson, January 1993</i></p> <p>No. 3 Rural Institutional Finance in Bangladesh and Nepal: Review and Agenda for Reforms<br/>—<i>A.H.M.N. Chowdhury and Marcellia C. Garcia, November 1993</i></p> <p>No. 4 Fiscal Deficits and Current Account Imbalances of the South Pacific Countries: A Case Study of Vanuatu<br/>—<i>T.K. Jayaraman, December 1993</i></p> <p>No. 5 Reforms in the Transitional Economies of Asia<br/>—<i>Pradumna B. Rana, December 1993</i></p> <p>No. 6 Environmental Challenges in the People's Republic of China and Scope for Bank Assistance<br/>—<i>Elisabetta Capannelli and Omkar L. Shrestha, December 1993</i></p> <p>No. 7 Sustainable Development Environment and Poverty Nexus<br/>—<i>K.F. Jalal, December 1993</i></p> <p>No. 8 Intermediate Services and Economic Development: The Malaysian Example<br/>—<i>Sutanu Behuria and Rahul Khullar, May 1994</i></p> <p>No. 9 Interest Rate Deregulation: A Brief Survey of the Policy Issues and the Asian Experience<br/>—<i>Carlos J. Glower, July 1994</i></p> <p>No. 10 Some Aspects of Land Administration in Indonesia: Implications for Bank Operations<br/>—<i>Sutanu Behuria, July 1994</i></p> <p>No. 11 Demographic and Socioeconomic Determinants of Contraceptive Use among Urban Women in the Melanesian Countries in the South Pacific: A Case Study of Port Vila Town in Vanuatu<br/>—<i>T.K. Jayaraman, February 1995</i></p> | <p>No. 12 Managing Development through Institution Building<br/>— <i>Hilton L. Root, October 1995</i></p> <p>No. 13 Growth, Structural Change, and Optimal Poverty Interventions<br/>—<i>Shiladitya Chatterjee, November 1995</i></p> <p>No. 14 Private Investment and Macroeconomic Environment in the South Pacific Island Countries: A Cross-Country Analysis<br/>—<i>T.K. Jayaraman, October 1996</i></p> <p>No. 15 The Rural-Urban Transition in Viet Nam: Some Selected Issues<br/>—<i>Sudipto Mundle and Brian Van Arkadie, October 1997</i></p> <p>No. 16 A New Approach to Setting the Future Transport Agenda<br/>—<i>Roger Allport, Geoff Key, and Charles Melhuish, June 1998</i></p> <p>No. 17 Adjustment and Distribution: The Indian Experience<br/>—<i>Sudipto Mundle and V.B. Tulasidhar, June 1998</i></p> <p>No. 18 Tax Reforms in Viet Nam: A Selective Analysis<br/>—<i>Sudipto Mundle, December 1998</i></p> <p>No. 19 Surges and Volatility of Private Capital Flows to Asian Developing Countries: Implications for Multilateral Development Banks<br/>—<i>Pradumna B. Rana, December 1998</i></p> <p>No. 20 The Millennium Round and the Asian Economies: An Introduction<br/>—<i>Dilip K. Das, October 1999</i></p> <p>No. 21 Occupational Segregation and the Gender Earnings Gap<br/>—<i>Joseph E. Zveglic, Jr. and Yana van der Meulen Rodgers, December 1999</i></p> <p>No. 22 Information Technology: Next Locomotive of Growth?<br/>—<i>Dilip K. Das, June 2000</i></p> |
|--|---|

## STATISTICAL REPORT SERIES (SR)

- |  |   |
|--|---|
| <p>No. 1 Estimates of the Total External Debt of the Developing Member Countries of ADB: 1981-1983<br/>—<i>I.P. David, September 1984</i></p> <p>No. 2 Multivariate Statistical and Graphical Classification Techniques Applied to the Problem of Grouping Countries<br/>—<i>I.P. David and D.S. Maligalig, March 1985</i></p> <p>No. 3 Gross National Product (GNP) Measurement Issues in South Pacific Developing Member Countries of ADB<br/>—<i>S.G. Tiwari, September 1985</i></p> <p>No. 4 Estimates of Comparable Savings in Selected DMCs<br/>—<i>Hananto Sigit, December 1985</i></p> <p>No. 5 Keeping Sample Survey Design and Analysis Simple<br/>—<i>I.P. David, December 1985</i></p> <p>No. 6 External Debt Situation in Asian Developing Countries<br/>—<i>I.P. David and Jungsoo Lee, March 1986</i></p> <p>No. 7 Study of GNP Measurement Issues in the South Pacific Developing Member Countries. Part I: Existing National Accounts of SPDMCs—Analysis of Methodology and Application of SNA Concepts<br/>—<i>P. Hodgkinson, October 1986</i></p> <p>No. 8 Study of GNP Measurement Issues in the South Pacific Developing Member Countries. Part II: Factors Affecting Intercountry Comparability of Per Capita GNP<br/>—<i>P. Hodgkinson, October 1986</i></p> <p>No. 9 Survey of the External Debt Situation</p> | <p>in Asian Developing Countries, 1985<br/>—<i>Jungsoo Lee and I.P. David, April 1987</i></p> <p>No. 10 A Survey of the External Debt Situation in Asian Developing Countries, 1986<br/>—<i>Jungsoo Lee and I.P. David, April 1988</i></p> <p>No. 11 Changing Pattern of Financial Flows to Asian and Pacific Developing Countries<br/>—<i>Jungsoo Lee and I.P. David, March 1989</i></p> <p>No. 12 The State of Agricultural Statistics in Southeast Asia<br/>—<i>I.P. David, March 1989</i></p> <p>No. 13 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1987-1988<br/>—<i>Jungsoo Lee and I.P. David, July 1989</i></p> <p>No. 14 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1988-1989<br/>—<i>Jungsoo Lee, May 1990</i></p> <p>No. 15 A Survey of the External Debt Situation in Asian and Pacific Developing Countries: 1989-1992<br/>—<i>Min Tang, June 1991</i></p> <p>No. 16 Recent Trends and Prospects of External Debt Situation and Financial Flows to Asian and Pacific Developing Countries<br/>—<i>Min Tang and Aludía Pardo, June 1992</i></p> <p>No. 17 Purchasing Power Parity in Asian Developing Countries: A Co-Integration Test<br/>—<i>Min Tang and Ronald Q. Butiong, April 1994</i></p> <p>No. 18 Capital Flows to Asian and Pacific Developing Countries: Recent Trends and Future Prospects<br/>—<i>Min Tang and James Villafuerte, October 1995</i></p> |
|--|---|

## SERIALS

(Available commercially through ADB Office of External Relations)

1. Asian Development Outlook (ADO; annual)  
*\$36.00 (paperback)*
2. Key Indicators of Developing Asian and Pacific Countries (KI; annual)  
*\$35.00 (paperback)*
3. Asian Development Review (ADR; semiannual)  
*\$5.00 per issue; \$8.00 per year (2 issues)*

## SPECIAL STUDIES, CO-PUBLISHED

(Available commercially through Oxford University Press Offices, Edward Elgar Publishing, and Palgrave MacMillan)

### FROM OXFORD UNIVERSITY PRESS:

Oxford University Press (China) Ltd  
18th Floor, Warwick House East  
Taikoo Place, 979 King's Road  
Quarry Bay, Hong Kong  
Tel (852) 2516 3222  
Fax (852) 2565 8491  
E-mail: [webmaster@oupchina.com.hk](mailto:webmaster@oupchina.com.hk)  
Web: [www.oupchina.com.hk](http://www.oupchina.com.hk)

1. Informal Finance: Some Findings from Asia  
*Prabhu Ghate et. al., 1992*  
*\$15.00 (paperback)*
2. Mongolia: A Centrally Planned Economy  
in Transition  
*Asian Development Bank, 1992*  
*\$15.00 (paperback)*
3. Rural Poverty in Asia, Priority Issues and Policy  
Options  
*Edited by M.G. Quibria, 1994*  
*\$25.00 (paperback)*
4. Growth Triangles in Asia: A New Approach  
to Regional Economic Cooperation  
*Edited by Myo Thant, Min Tang, and Hiroshi Kakazu*  
*1st ed., 1994 \$36.00 (hardbound)*  
*Revised ed., 1998 \$55.00 (hardbound)*
5. Urban Poverty in Asia: A Survey of Critical Issues  
*Edited by Ernesto Pernia, 1994*  
*\$18.00 (paperback)*
6. Critical Issues in Asian Development:  
Theories, Experiences, and Policies  
*Edited by M.G. Quibria, 1995*  
*\$15.00 (paperback)*  
*\$36.00 (hardbound)*
7. Financial Sector Development in Asia  
*Edited by Shahid N. Zahid, 1995*  
*\$50.00 (hardbound)*
8. Financial Sector Development in Asia: Country Studies  
*Edited by Shahid N. Zahid, 1995*  
*\$55.00 (hardbound)*
9. Fiscal Management and Economic Reform  
in the People's Republic of China  
*Christine P.W. Wong, Christopher Heady, and Wing T.  
Woo, 1995*  
*\$15.00 (paperback)*
10. From Centrally Planned to Market Economies:  
The Asian Approach  
*Edited by Pradumna B. Rana and Naved Hamid, 1995*  
Vol. 1: Overview  
*\$36.00 (hardbound)*  
Vol. 2: People's Republic of China and Mongolia  
*\$50.00 (hardbound)*  
Vol. 3: Lao PDR, Myanmar, and Viet Nam  
*\$50.00 (hardbound)*

11. Current Issues in Economic Development:  
An Asian Perspective  
*Edited by M.G. Quibria and J. Malcolm Dowling, 1996*  
*\$50.00 (hardbound)*
12. The Bangladesh Economy in Transition  
*Edited by M.G. Quibria, 1997*  
*\$20.00 (hardbound)*
13. The Global Trading System and Developing Asia  
*Edited by Arvind Panagariya, M.G. Quibria,  
and Narhari Rao, 1997*  
*\$55.00 (hardbound)*
14. Social Sector Issues in Transitional Economies of Asia  
*Edited by Douglas H. Brooks and Myo Thant, 1998*  
*\$25.00 (paperback)*  
*\$55.00 (hardbound)*
15. Intergovernmental Fiscal Transfers in Asia: Current  
Practice and Challenges for the Future  
*Edited by Yun-Hwan Kim and Paul Smoke, 2003*  
*\$15.00 (paperback)*
16. Local Government Finance and Bond Markets  
*Edited by Yun-Hwan Kim, 2003*  
*\$15.00 (paperback)*

### FROM EDWARD ELGAR:

Marston Book Services Limited  
PO Box 269, Abingdon  
Oxon OX14 4YN, United Kingdom  
Tel +44 1235 465500  
Fax +44 1235 465555  
Email: [direct.order@marston.co.uk](mailto:direct.order@marston.co.uk)  
Web: [www.marston.co.uk](http://www.marston.co.uk)

1. Reducing Poverty in Asia: Emerging Issues in Growth,  
Targeting, and Measurement  
*Edited by Christopher M. Edmonds, 2003*

### FROM PALGRAVE MACMILLAN:

Palgrave Macmillan Ltd  
Houndmills, Basingstoke  
Hampshire RG21 6XS, United Kingdom  
Tel: +44 (0)1256 329242  
Fax: +44 (0)1256 479476  
Email: [orders@palgrave.com](mailto:orders@palgrave.com)  
Web: [www.palgrave.com/home/](http://www.palgrave.com/home/)

1. Managing FDI in a Globalizing Economy  
Asian Experiences  
*Edited by Douglas H. Brooks and Hal Hill, 2004*
2. Poverty, Growth, and Institutions in Developing Asia  
*Edited by Ernesto M. Pernia and Anil B. Deolalikar,  
2003*

## SPECIAL STUDIES, IN-HOUSE

(Available commercially through ADB Office of External Relations)

1. Rural Poverty in Developing Asia  
*Edited by M.G. Quibria*  
Vol. 1: Bangladesh, India, and Sri Lanka, 1994 \$35.00 (paperback)  
Vol. 2: Indonesia, Republic of Korea, Philippines, and Thailand, 1996 \$35.00 (paperback)
2. Gender Indicators of Developing Asian and Pacific Countries  
*Asian Development Bank, 1993*  
\$25.00 (paperback)
3. External Shocks and Policy Adjustments: Lessons from the Gulf Crisis  
*Edited by Naved Hamid and Shahid N. Zahid, 1995*  
\$15.00 (paperback)
4. Indonesia-Malaysia-Thailand Growth Triangle: Theory to Practice  
*Edited by Myo Thant and Min Tang, 1996*  
\$15.00 (paperback)
5. Emerging Asia: Changes and Challenges  
*Asian Development Bank, 1997*  
\$30.00 (paperback)
6. Asian Exports  
*Edited by Dilip Das, 1999*  
\$35.00 (paperback)  
\$55.00 (hardbound)
7. Development of Environment Statistics in Developing Asian and Pacific Countries  
*Asian Development Bank, 1999*  
\$30.00 (paperback)
8. Mortgage-Backed Securities Markets in Asia  
*Edited by S.Ghon Rhee & Yutaka Shimomoto, 1999*  
\$35.00 (paperback)
9. Rising to the Challenge in Asia: A Study of Financial Markets  
*Asian Development Bank*  
Vol. 1: An Overview, 2000 \$20.00 (paperback)  
Vol. 2: Special Issues, 1999 \$15.00 (paperback)  
Vol. 3: Sound Practices, 2000 \$25.00 (paperback)  
Vol. 4: People's Republic of China, 1999 \$20.00 (paperback)  
Vol. 5: India, 1999 \$30.00 (paperback)  
Vol. 6: Indonesia, 1999 \$30.00 (paperback)  
Vol. 7: Republic of Korea, 1999 \$30.00 (paperback)  
Vol. 8: Malaysia, 1999 \$20.00 (paperback)  
Vol. 9: Pakistan, 1999 \$30.00 (paperback)  
Vol. 10: Philippines, 1999 \$30.00 (paperback)  
Vol. 11: Thailand, 1999 \$30.00 (paperback)  
Vol. 12: Socialist Republic of Viet Nam, 1999 \$30.00 (paperback)
10. Corporate Governance and Finance in East Asia: A Study of Indonesia, Republic of Korea, Malaysia, Philippines and Thailand  
*J. Zhuang, David Edwards, D. Webb, & Ma. Virginita Capulong*  
Vol. 1: A Consolidated Report, 2000 \$10.00 (paperback)  
Vol. 2: Country Studies, 2001 \$15.00 (paperback)
11. Financial Management and Governance Issues  
*Asian Development Bank, 2000*  
Cambodia \$10.00 (paperback)  
People's Republic of China \$10.00 (paperback)  
Mongolia \$10.00 (paperback)  
Pakistan \$10.00 (paperback)  
Papua New Guinea \$10.00 (paperback)  
Uzbekistan \$10.00 (paperback)  
Viet Nam \$10.00 (paperback)  
Selected Developing Member Countries \$10.00 (paperback)
12. Government Bond Market Development in Asia  
*Edited by Yun-Hwan Kim, 2001*  
\$25.00 (paperback)
13. Intergovernmental Fiscal Transfers in Asia: Current Practice and Challenges for the Future  
*Edited by Paul Smoke and Yun-Hwan Kim, 2002*  
\$15.00 (paperback)
14. Guidelines for the Economic Analysis of Projects  
*Asian Development Bank, 1997*  
\$10.00 (paperback)
15. Guidelines for the Economic Analysis of Telecommunications Projects  
*Asian Development Bank, 1997*  
\$10.00 (paperback)
16. Handbook for the Economic Analysis of Water Supply Projects  
*Asian Development Bank, 1999*  
\$10.00 (hardbound)
17. Handbook for the Economic Analysis of Health Sector Projects  
*Asian Development Bank, 2000*  
\$10.00 (paperback)
18. Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects  
*Asian Development Bank, 2001*  
\$10.00 (paperback)
19. Handbook for Integrating Risk Analysis in the Economic Analysis of Projects  
*Asian Development Bank, 2002*  
\$10.00 (paperback)
20. Handbook on Environment Statistics  
*Asian Development Bank, 2002*  
\$10.00 (hardback)
21. Defining an Agenda for Poverty Reduction, Volume 1  
*Edited by Christopher Edmonds and Sara Medina, 2002*  
\$15.00 (paperback)
22. Defining an Agenda for Poverty Reduction, Volume 2  
*Edited by Isabel Ortiz, 2002*  
\$15.00 (paperback)
23. Economic Analysis of Policy-based Operations: Key Dimensions  
*Asian Development Bank, 2003*  
\$10.00 (paperback)